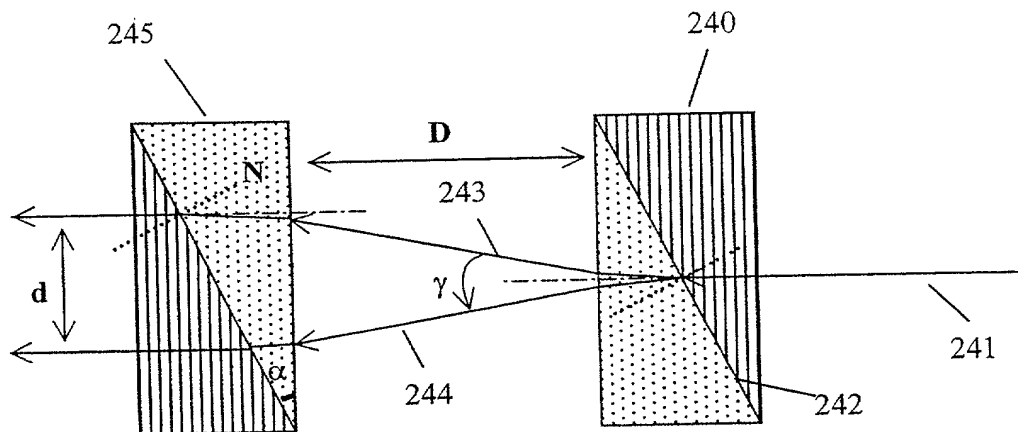


Fig. 1C

⊕	⊖	⊗	⊙	⊙	⊙	⊙	⊗	⊙	⊕
⊖	⊕	⊗	⊙	⊙	⊙	⊙	⊗	⊙	⊕
A	B	C	D	E	F	G	H	I	J
⊕	⊕	⊗	⊖	⊖	⊖	⊖	⊗	⊙	⊕
⊖	⊕	⊗	⊖	⊖	⊖	⊖	⊗	⊙	⊕

Fig. 1D



$$d \approx 2D \tan(\gamma/2) = 2D \tan\{\arcsin[(n_0 - n_e)\tan(\alpha)]\}$$

Example: $\alpha = 30^\circ$, $\Delta n = 0.2$, $D = 2\text{mm} \rightarrow d = 0.4\text{mm}$
 $4\text{mm} \rightarrow 0.8\text{mm}$

Fig. 2

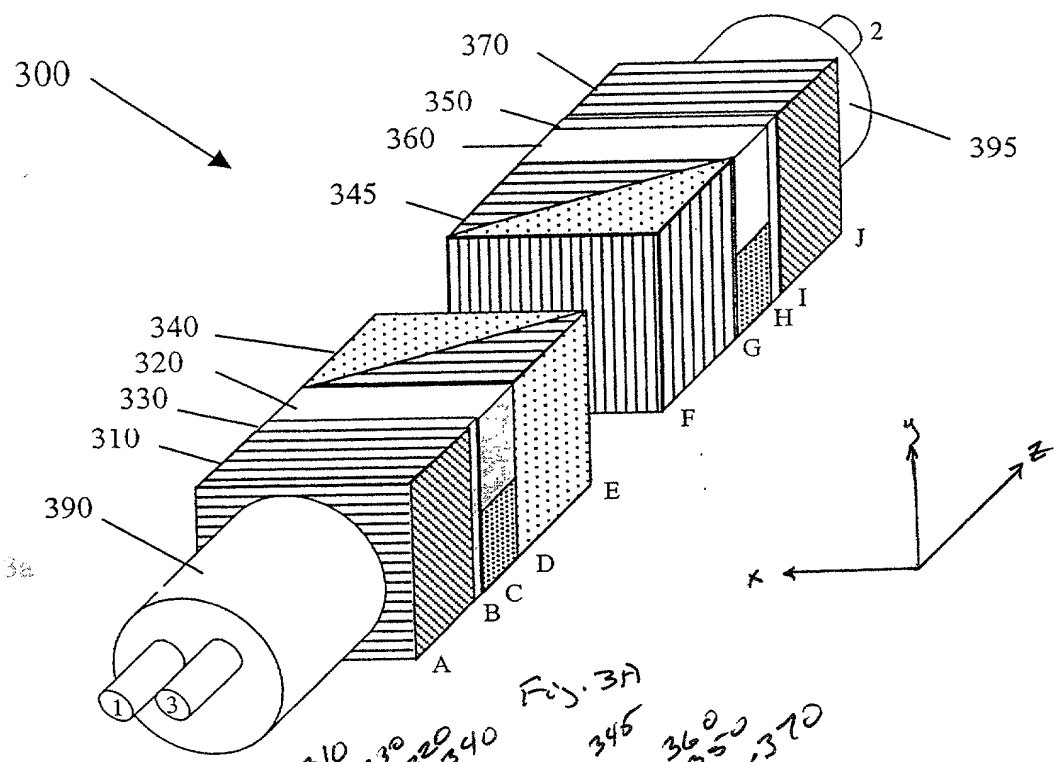


Figure 3a

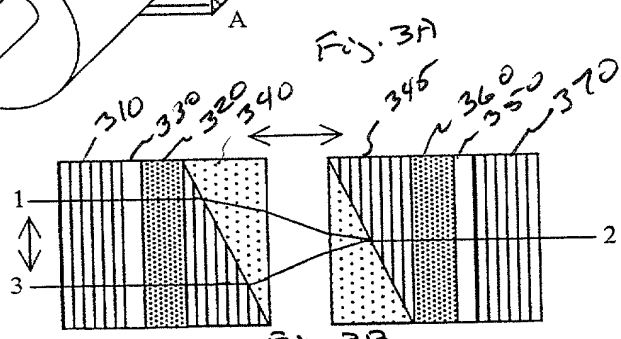


Figure 3b (top)

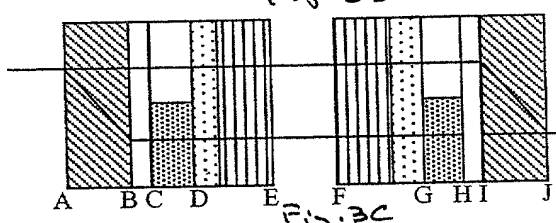


Figure 3c (side)

Fig. 3D

⊕	⊖	⊗	⊙	⊙	⊙	⊙	⊗	⊙	⊕
A	B	C	D	E	F	G	H	I	J
⊕	⊖	⊗	⊙	⊙	⊙	⊙	⊗	⊙	⊕

Fig. 3D

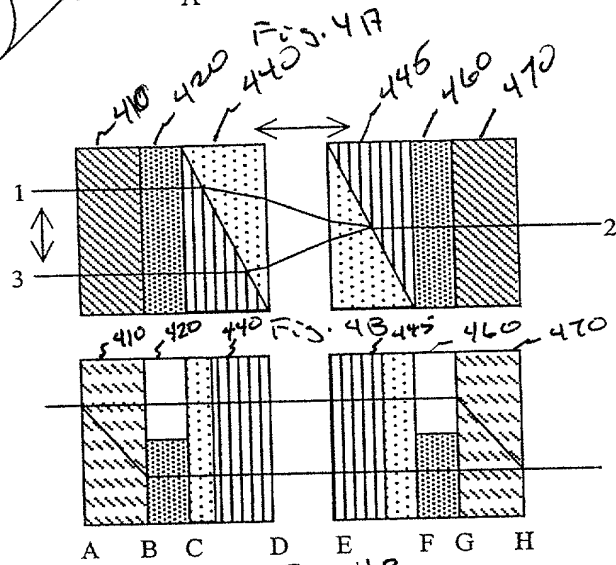
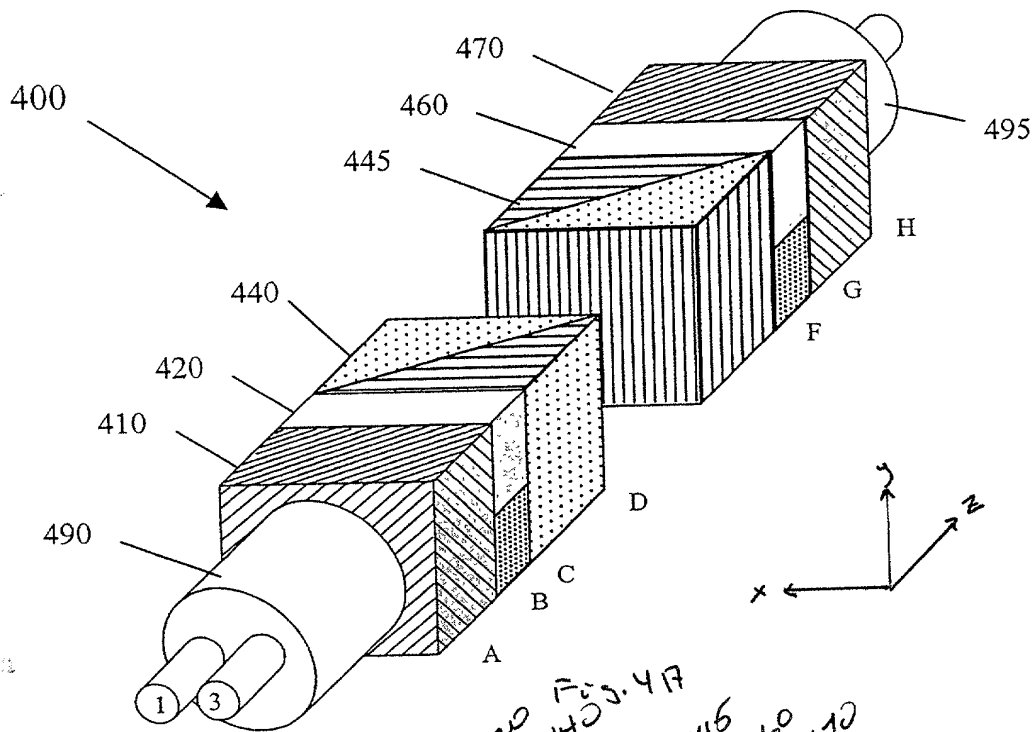


Fig. 4B

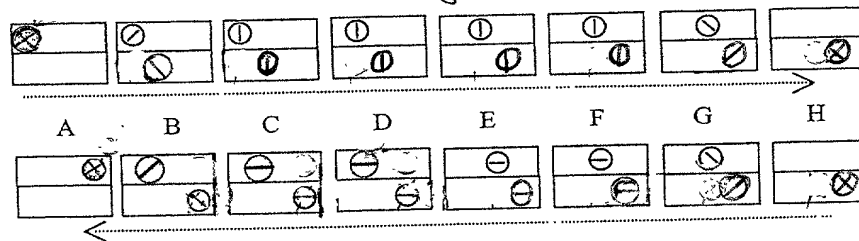


Fig. 4D

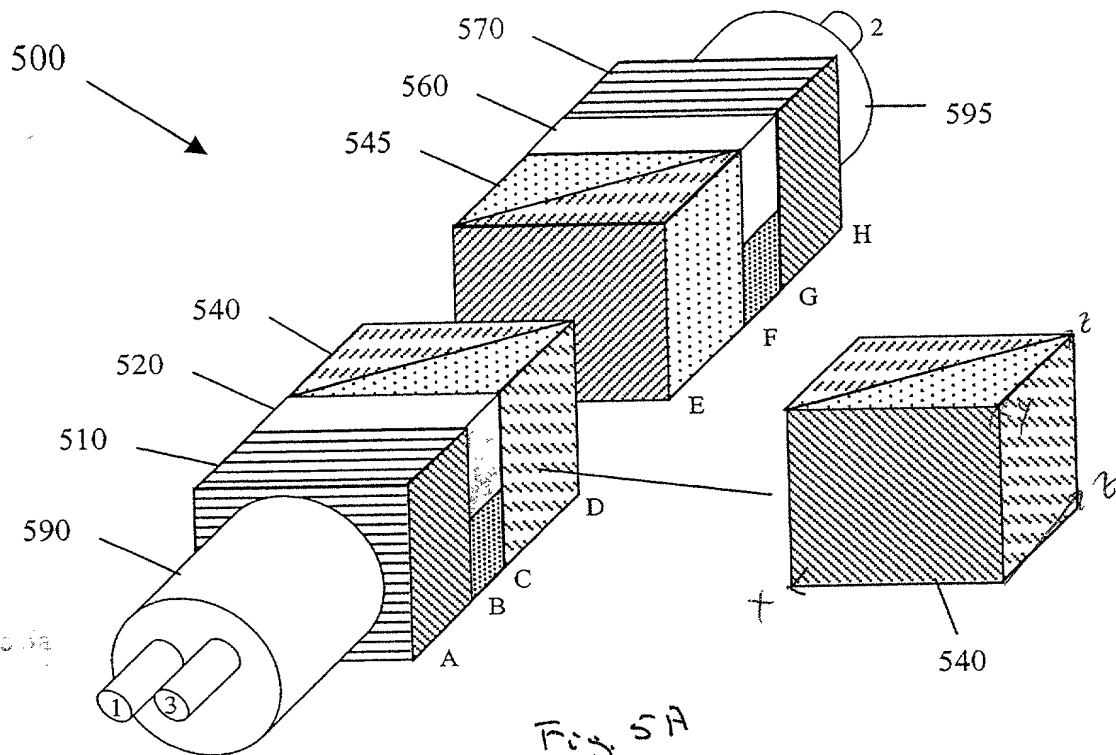


Figure 5a

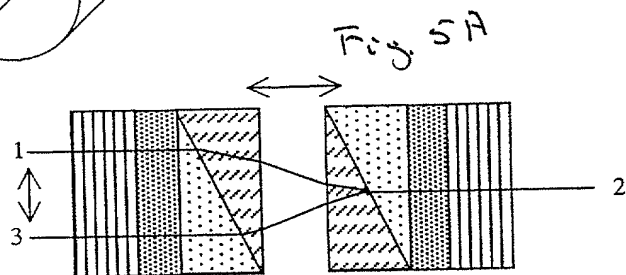


Figure 5b (top)

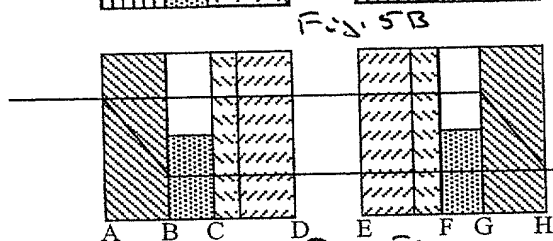


Figure 5c (bottom)

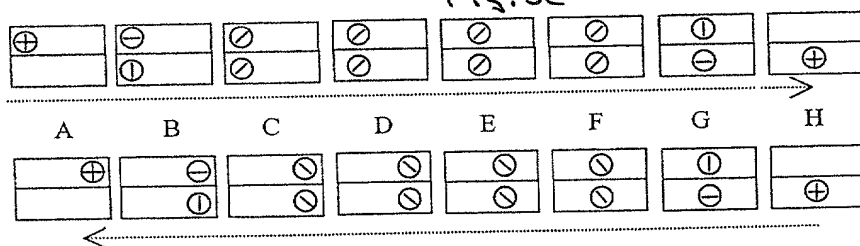


Figure 5d

Fig. 5d

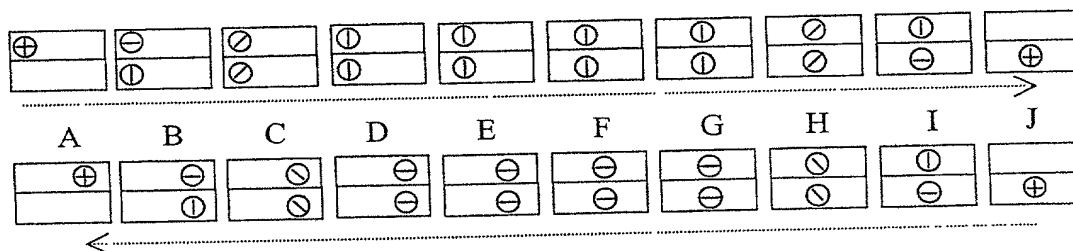
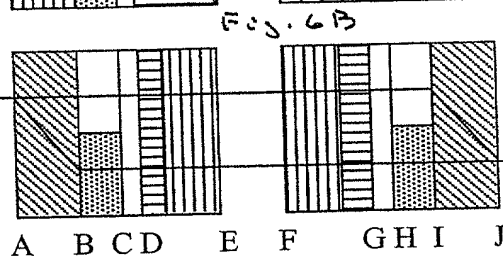
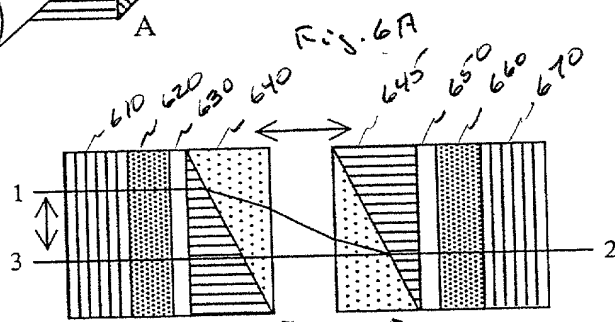
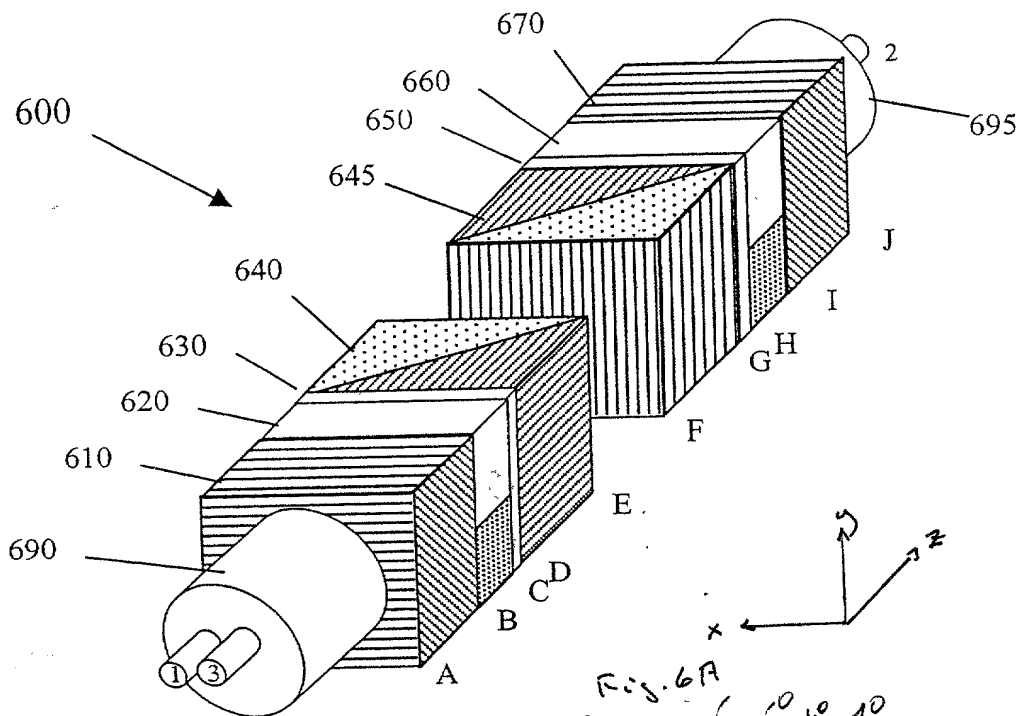


Fig. 6D

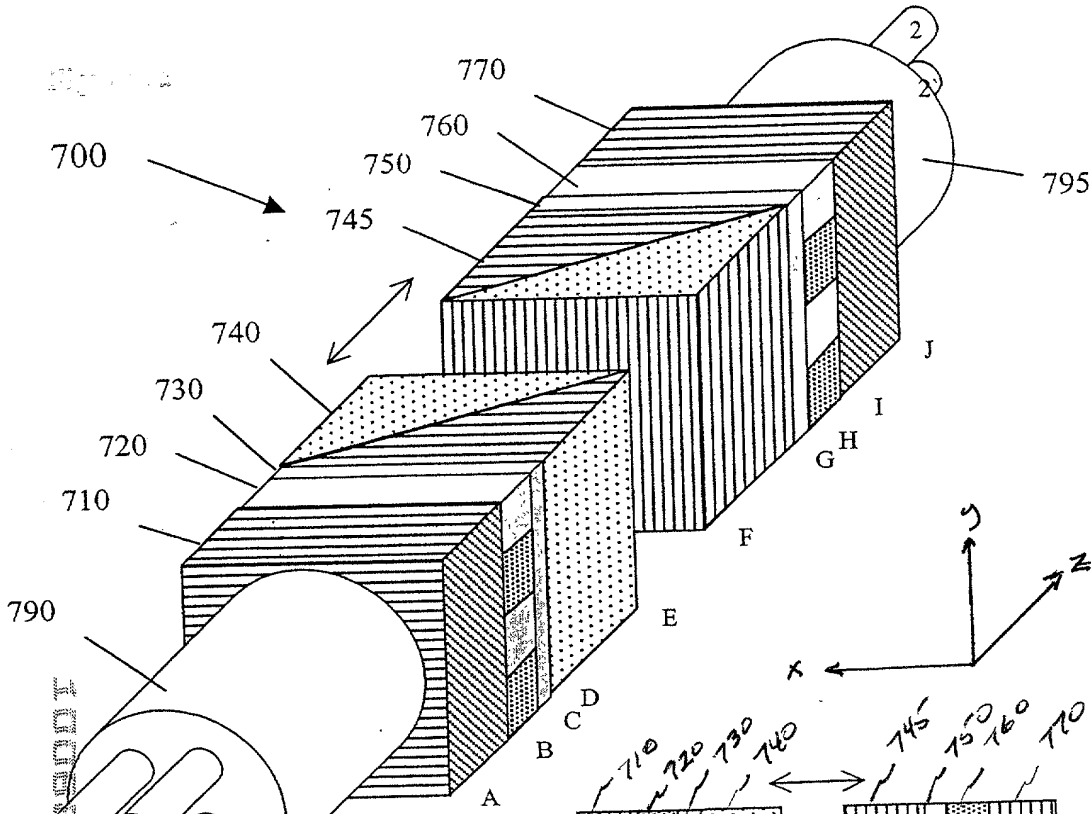


Fig. 7A

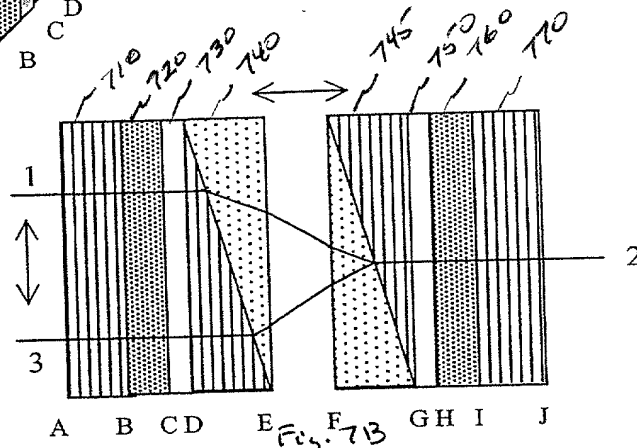


Fig. 7B

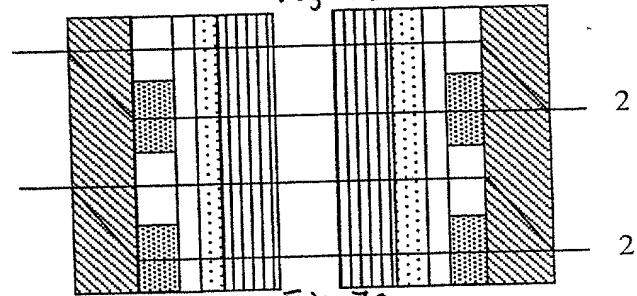


Fig. 7C

⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
A	B	C	D	E	F	G	H	I	J	

⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
⊕	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊖	⊕
A	B	C	D	E	F	G	H	I	J	

Fig. 7D

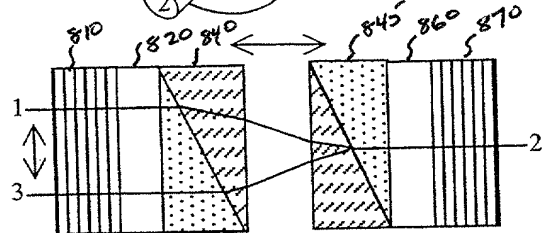
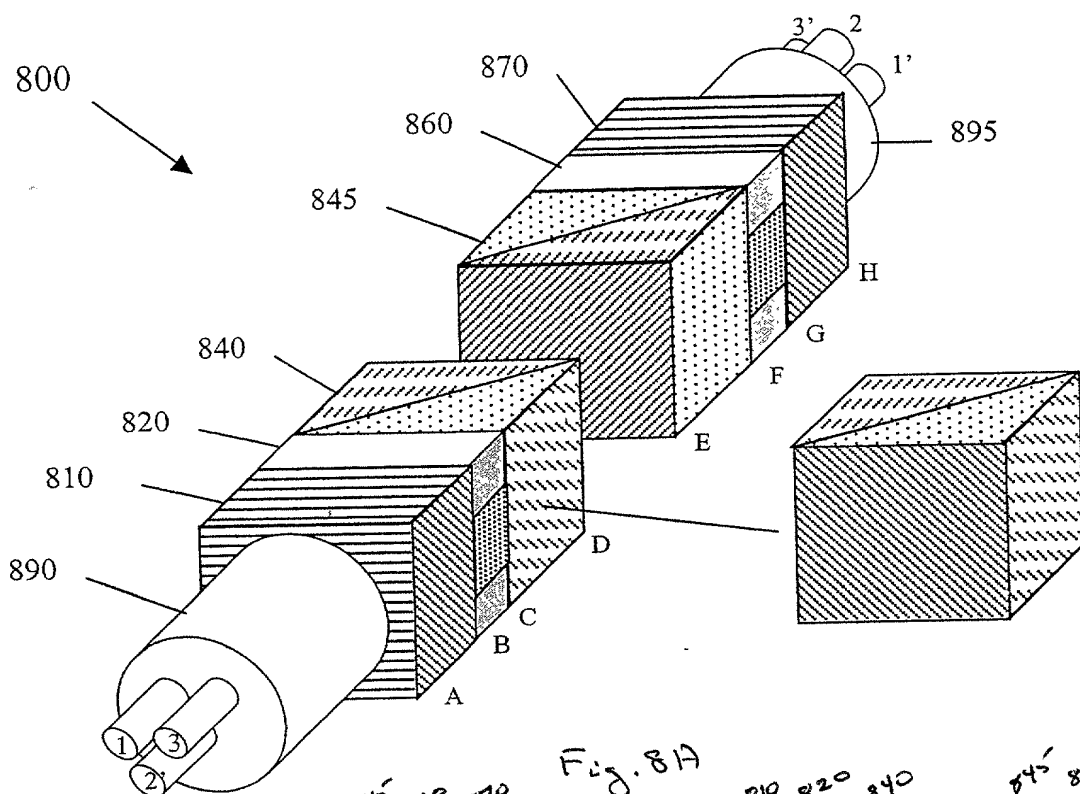


Fig. 8B (top)

Fig. 8A

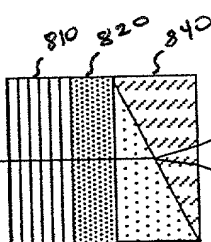


Fig. 8C (top)

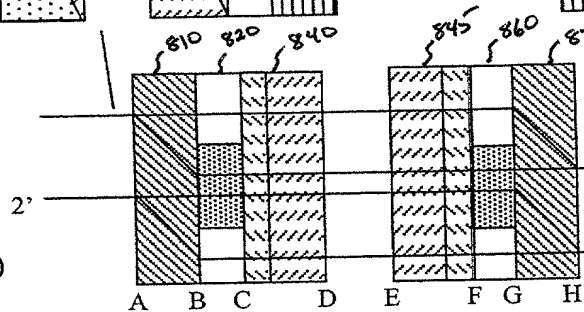


Fig. 8D (side)

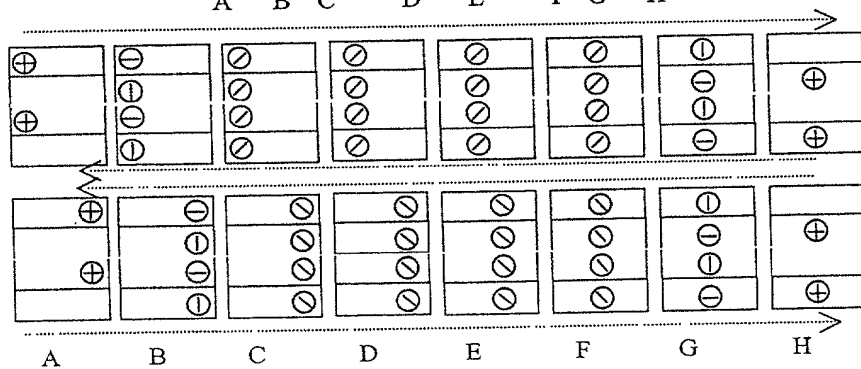


Fig. 8E

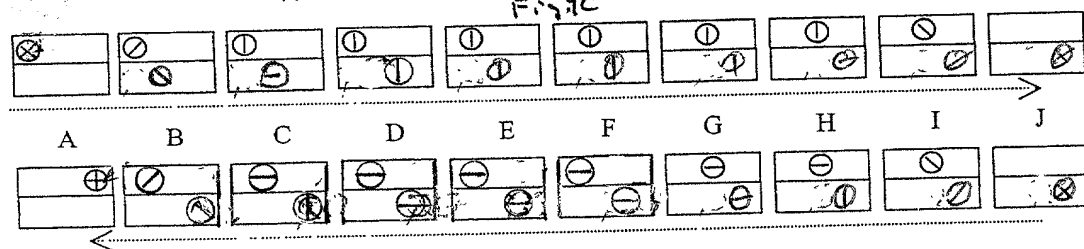
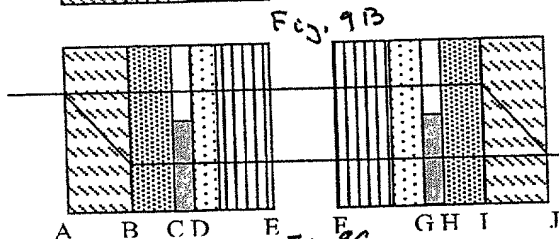
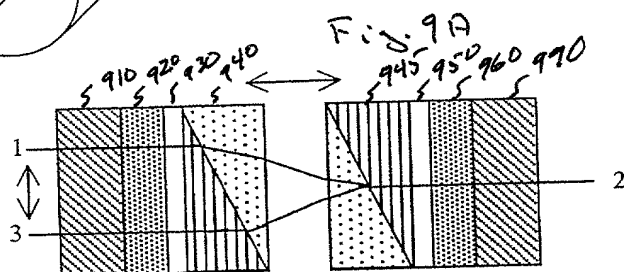
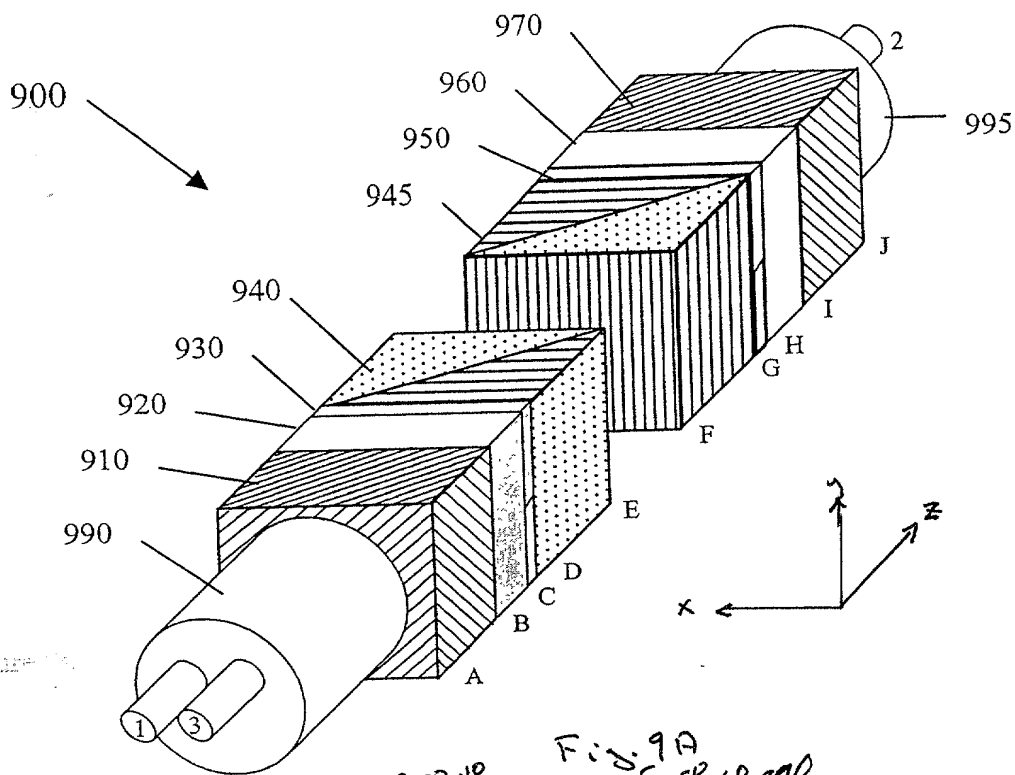


Fig. 9D

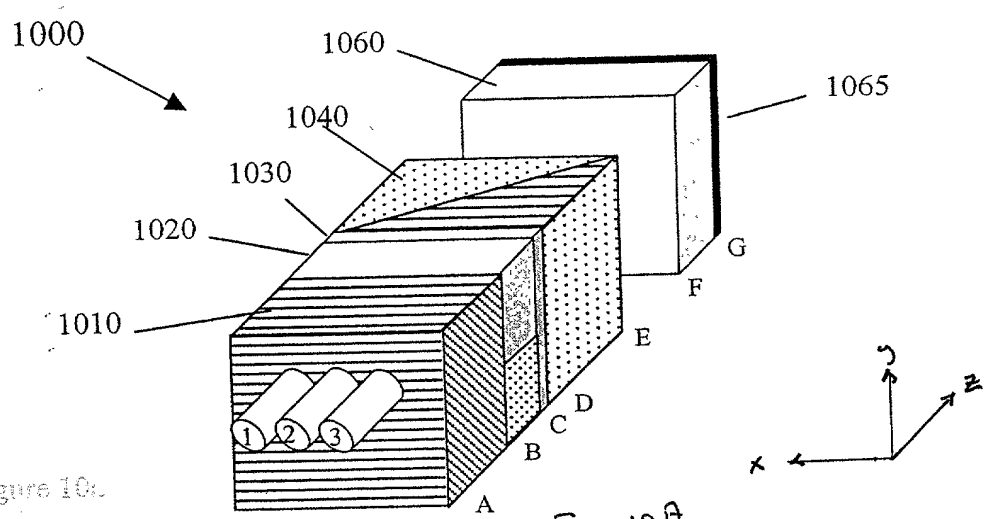


Figure 10A

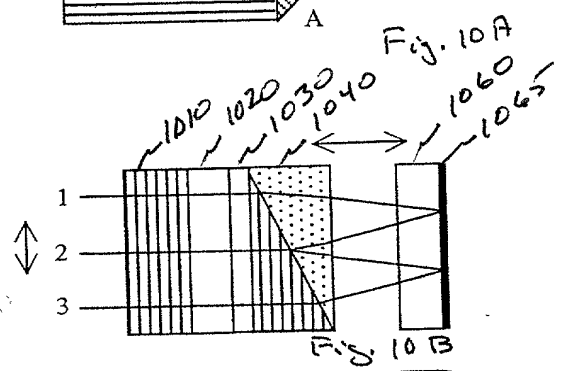


Fig. 10B

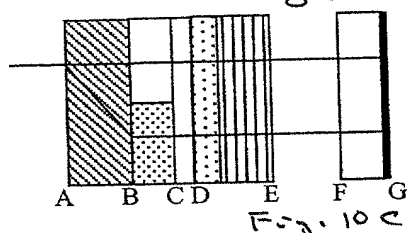


Fig. 10C

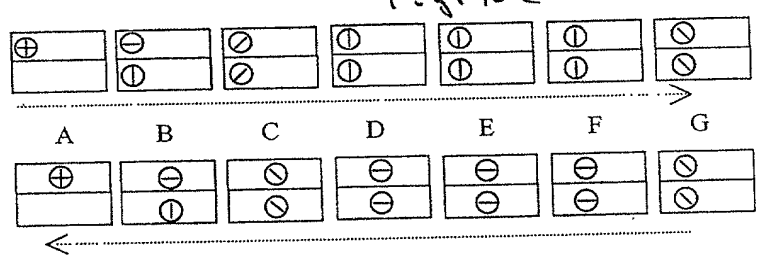


Fig. 10D

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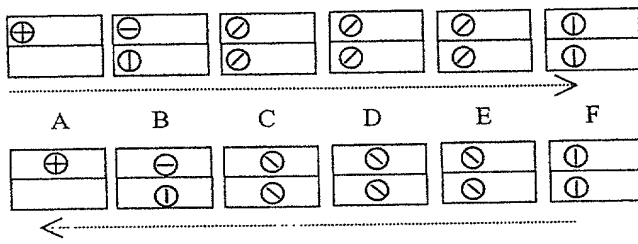
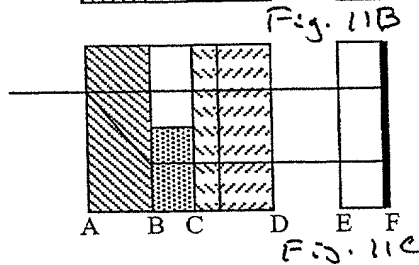
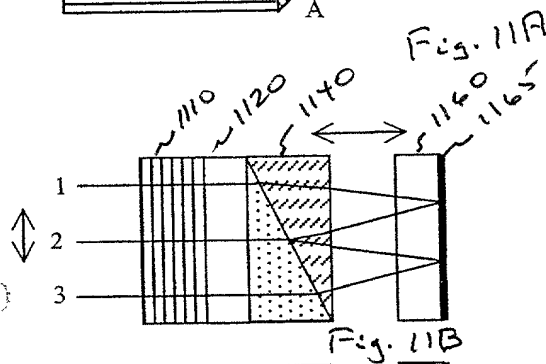
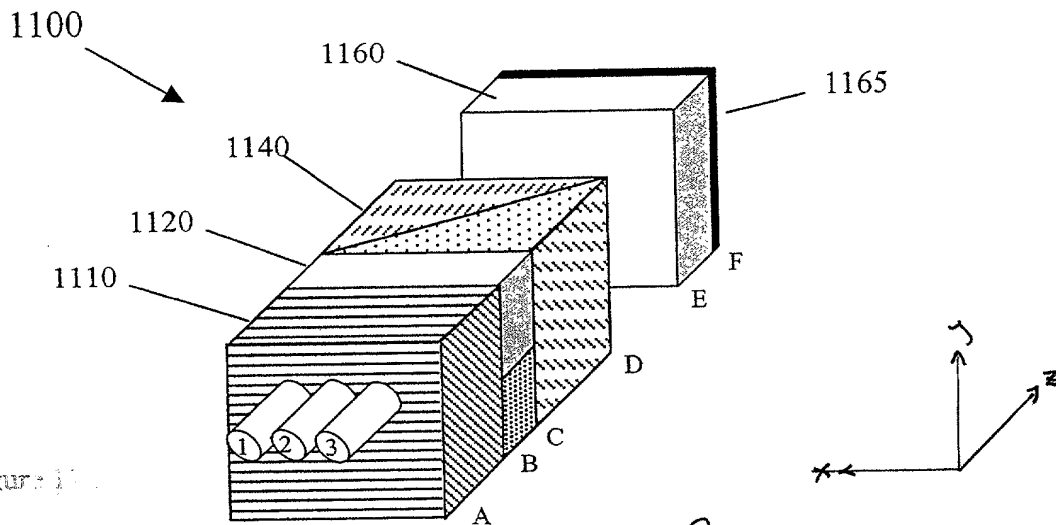


Fig. 11D

Fabrication Process of a Circulator Array

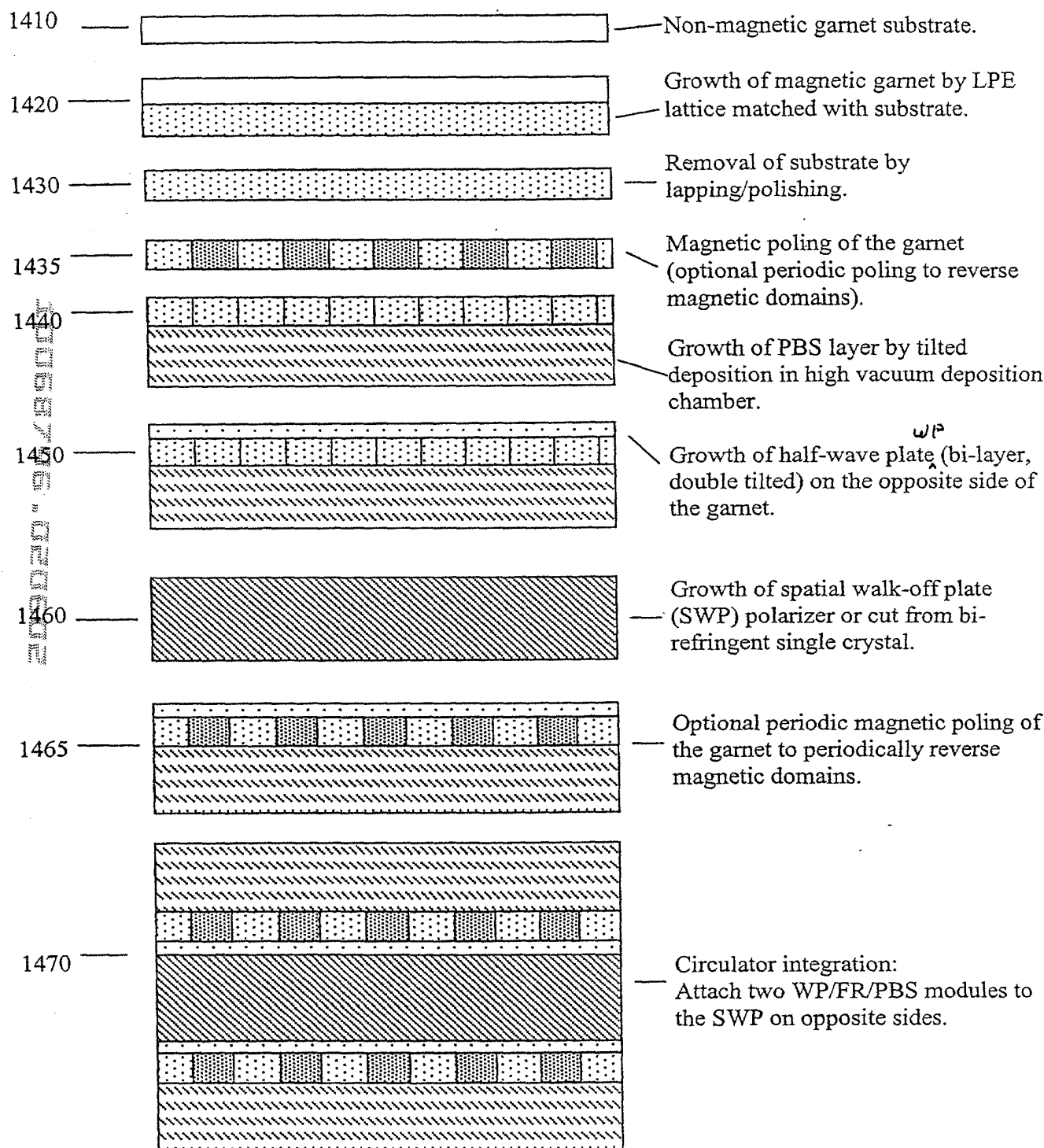
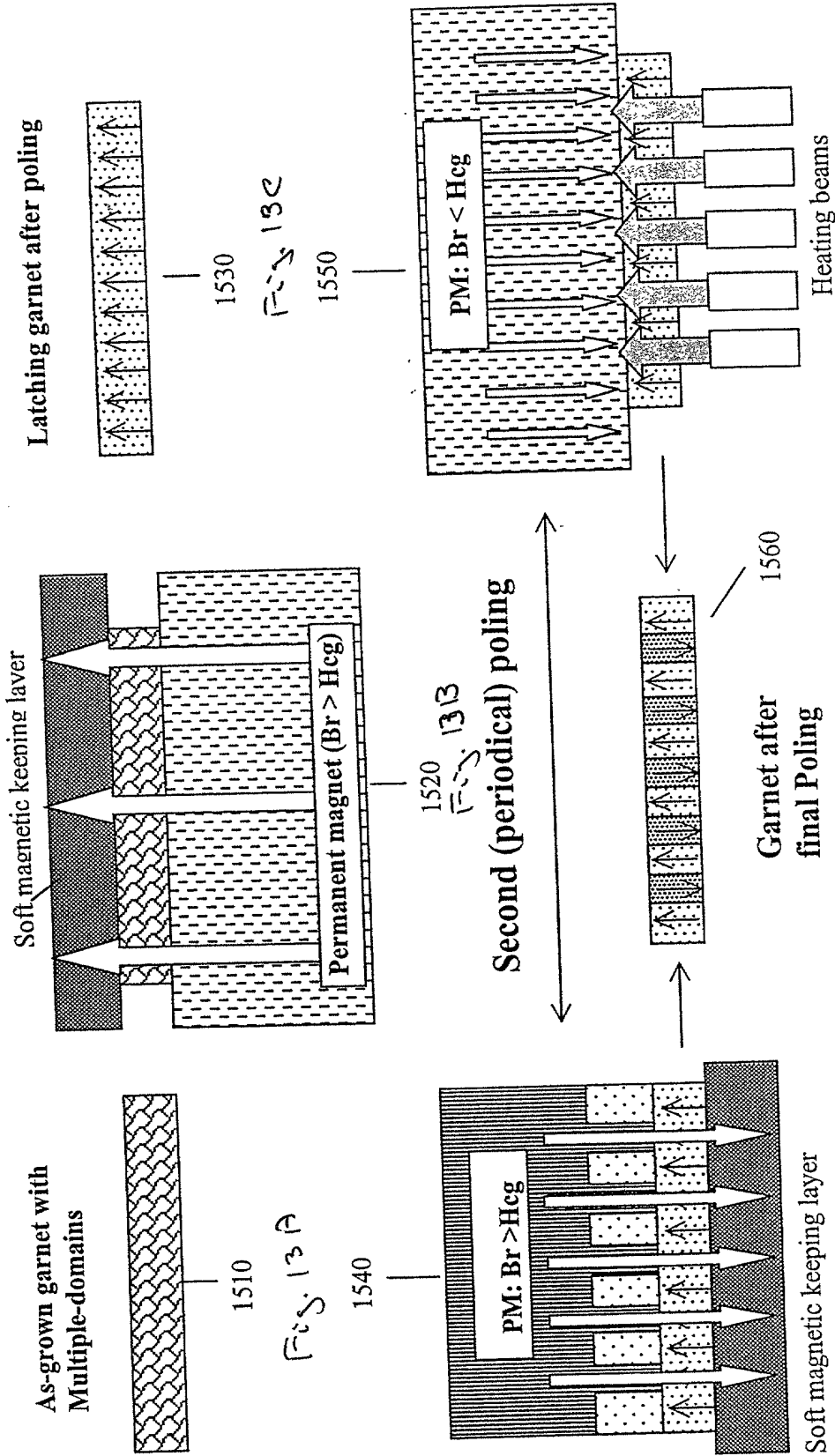


Fig. 12

Initial poling in high field



Hot poling: Only those domains illuminated by the heating beams are magnetically reversed.

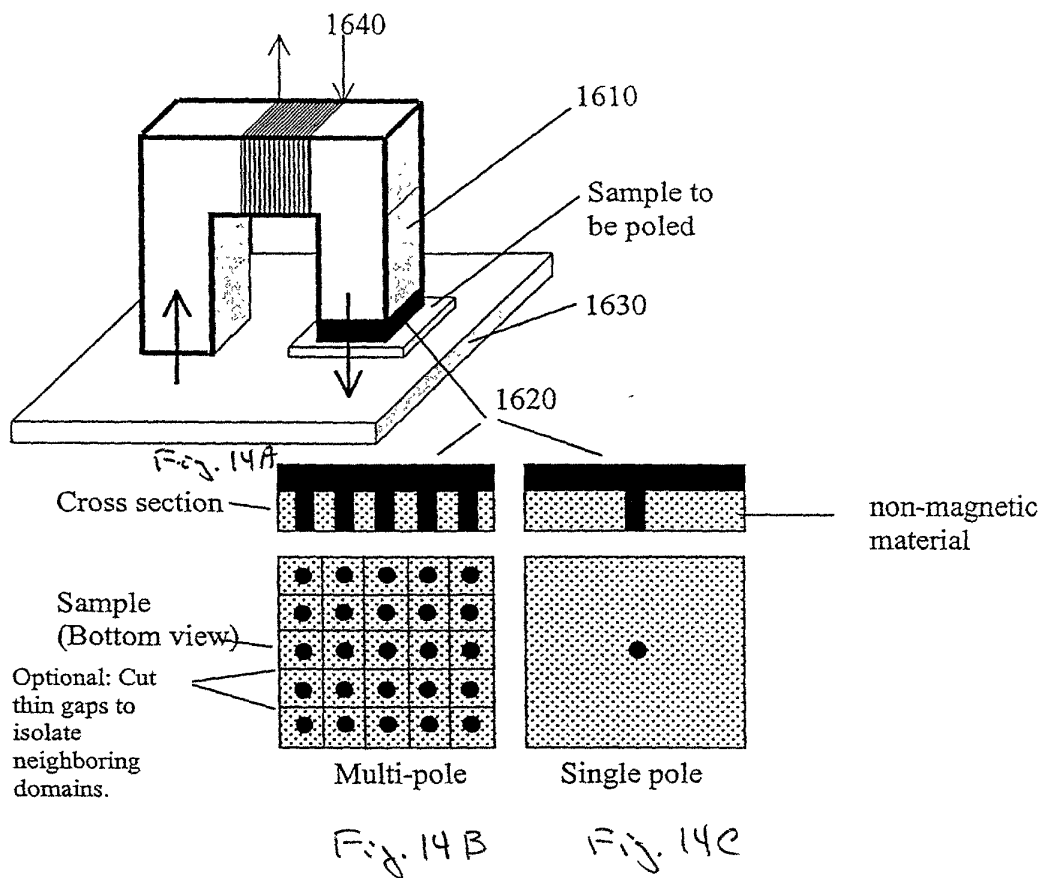
Fig. 13E

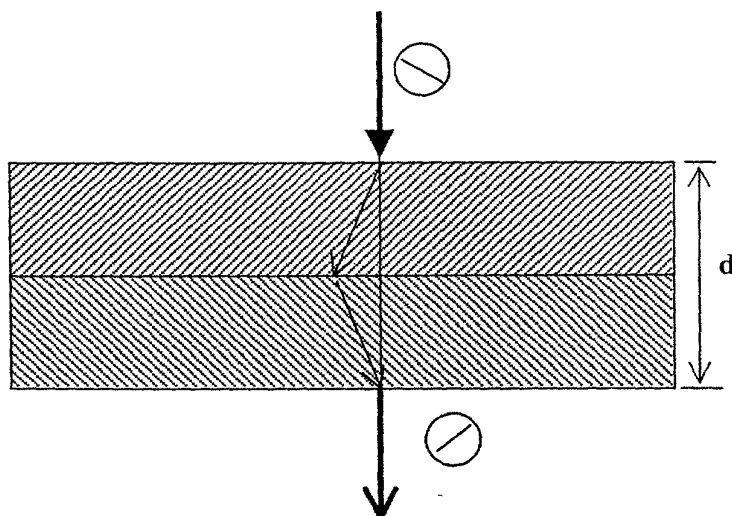
Cold poling: Only those domains contacting the magnetic tips are magnetically reversed.

Fig. 13D

Fig. 13F

Magnetic (Periodic) Poling of Faraday Rotator





Waveplate from bi-directionally obliquely deposited films

Half wave plate : $\Delta n \cdot d = \lambda/2$

The half-wave plate is capable of rotating a linearly polarized light by 2θ (where θ is the direction of polarization with respect to the optical axis before entering the wave plate).

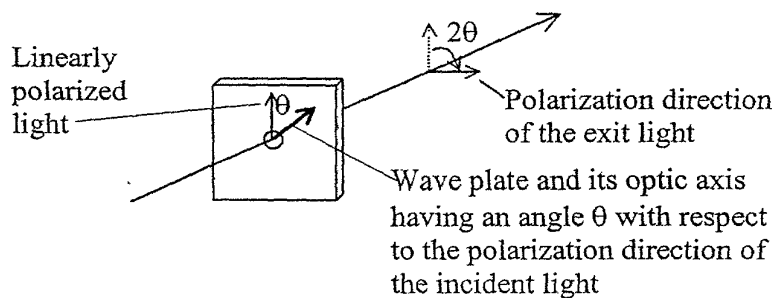


Fig. 15

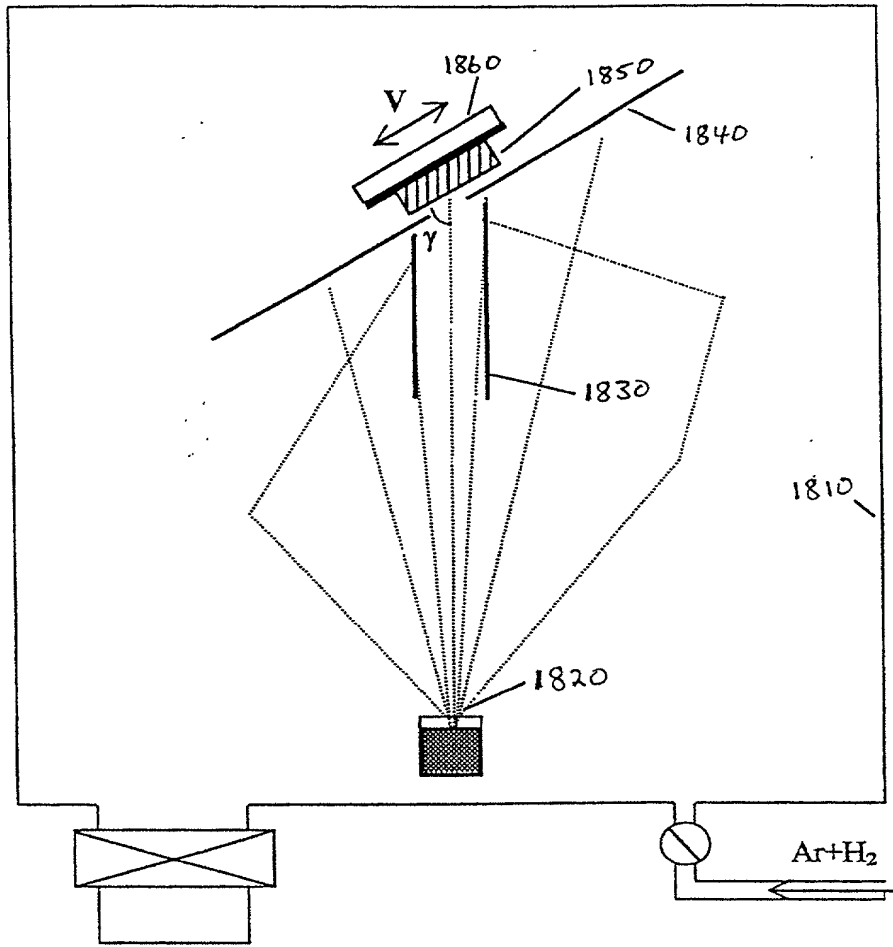


Fig. 16

Fig. 13

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Fabrication Process of a Circulator Array

